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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,229	04/12/2004	Toru Takeuchi	52433/760	4629

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EXAMINER	
CHAPMAN, JEANETTE E	
ART UNIT	PAPER NUMBER
3633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,229	TAKEUCHI ET AL.	
	Examiner	Art Unit	
	Jeanette E. Chapman	3633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8,9 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-9 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8 and 16, 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuumi (JP 05263469)(figures 4 and 5) in view Beauvoir , Matsuo et al (4905436) and further in view of Nomichi et al(JP 07150629A)

Claim 8

Furuumi discloses a column-and-beam join structure fabricated by connecting flanges of split tees 20 to a steel column 24 using bolts 22 and by engaging and connecting webs 5b of the split tees to the ends of flanges 3b of a steel beam using bolts 7, Beauvoir discloses a column beam joint structure wherein : Beauvoir discloses the upper limit of the yield stress of 50ksi of the steel material is defined not to be more than the lower limit of 36 ksi thereof; see column 5, lines 35-43. It would have been obvious to one of ordinary skill in the art to provide comparable values for the yield stress between split tees in order to provide to have beams and columns protected by the connector which acts as a strong fuse.

Further, Furummi discloses, at a portion where both ends of the flange of the at least one split tee are connected to the steel column using bolts, space keeping members 2 are inserted between the flange 20 of the at least one split tee and the steel column 24 to provide a an open space between the flange 20 of the split tee and the steel column 24, wherein the web, near 22 and 23, of the at least one split tee has an extended

direction parallel to the longitudinal direction of the steel beam 21, the flange 20 of the at least one split tee has a width perpendicular to the axis of the steel column 21, and the flange 20 of the at least one split tee and the steel column 24 are connected in the state of maintaining the open space across the entire width of the flange 20 at least at a region corresponding to the extended direction of the web of the at least one split tee. See annotations on patent copy of previous office action.

claim 16:

Furuumi discloses a column-and-beam join structure fabricated by connecting the flanges of a pair of upper and lower split tees 20/22 to a steel column 24 using bolts and by engaging and connecting both the upper and lower flanges of a steel beam 21 between the webs of both the upper and lower split tees using bolts,

Furuumi further discloses, at a portion where both ends of the flange of the one split tee are connected to the steel column using bolts, space keeping members 2 are inserted between the flange 20 of the one split tee and the steel column 24 to provide a an open space between the flange of the one split tee 20 and the steel column 24, wherein the web 22/23 of the one split tee has an extended direction parallel to the longitudinal direction of the steel beam 21, the flange of the one split tee 20 has a width perpendicular to the axis of the column 24, and the flange of the one split tee 20 and the steel column are connected in the state of maintaining the open space across the entire width of the flange at least at a region corresponding to the extended direction of the web of the one split tee, see annotations on patent copy of previous action;

Beauvoir discloses a column beam joint structure wherein • Beauvoir discloses the

upper limit of the yield stress of 50ksi of the steel material is defined not to be more than twice the lower limit of 36 ksi thereof; see column 5, lines 35-43. It would have been obvious to one of ordinary skill in the art to provide comparable values for the yield stress between split tees in order to provide to have beams and columns protected by the connector which acts as a strong fuse

For claim 18 and 20, see rejection of claims 8 and 16.

The above claims lacks the open space along the entire length of the flange perpendicular to the axial direction of the steel column. Figure 14 or Matsuo discloses the flange of at least one split tee and the steel column are connected in the state of maintaining the open space 10c across the entire length of the flange perpendicular to the axial direction of the steel column 1 at least at a region corresponding to the extended direction of the web of at least one split tee because the space keeping member 10 are situated perpendicularly to the column instead of parallel to the column. It would have been obvious to oriented the space keeping members perpendicular to the axial direction of the column in order surround the column to facilitate adding the spacer 10 to the column.

. The open space would inherently provide for the plasticization of the flange of the at least one split tee in the tensile and compressive direction being allowed; Nevertheless, Nomichi discloses a split tee portion to join a column to a beam, 2,3; the split tee area 5 has a plastic deformation part or flange 34.. It would have been obvious to include a flange of a tee capable of accommodating plastic deformation in order to provide a low cost structure with high damping characteristics.

Claim 14, 19 are rejected under 35 U.S.C. 103(a)as being unpatentable over Furuumi (JP 05263469)(figures 4 and 5) in view of Matsuo et al (4905436) ,Beauvoir and further in view of Nomichi et al (JP 07150629A)

Furuumi discloses a column beam join structure fabricated by

•connecting the flanges 10 of upper and lower split tees to a steel column 1 using bolts 13 and

• engaging the engaging and connecting webs 1 of the tees of the ends of the flanges 10 of the steel beam using bolts 13 or

•by engaging and connecting the upper and lower flanges 10 of a steel beam between the webs of the upper and lower split tees using bolts

• Beauvoir discloses the upper limit of the yield stress of 50ksi of the steel material used for either one or both web and flange of the slit tee 10 is defined not to be more than the lower limit of 36ksi thereof; see column 5, lines 1-7 at a portion where both ends of the flange of the split tee are connected to the steel column using bolts

• space keeping members 2 are inserted between the flange 10 of the other split tee 20/22 and the steel column 24.

• connecting a pair of flanges 10 of upper and lower tees 5 to a steel column 1 using bolts 13 and 5

• The web of the other split tee 20/22 has an extended direction parallel to the longitudinal direction of the steel beam 21,

• The flange 20 of the other split tee has a width perpendicular to the axis of the steel column; see annotations on patent copy

• the other flange 20 of the other split tee and the steel column are connected in the state of maintaining the open space across the entire width of the flange at least at a region corresponding to the extended direction of the web of the other splits tee 5. See annotations on patent copy of previous action

Furuumi includes the same recited structure as that of the prior art thus capable of having the upper limit of the yield stress of 50ksi of the steel material used for either one or both web and flange of the split tee 3 is defined not to be more than the lower limit of 36ksi thereof as much as applicant's invention having the same limitations. See also above rejection of claim 8

Matsuo et al discloses a steel column and a split tee 32 with a connecting flange 3 connecting to a steel column 1. Matsuo et al discloses space keeping members 9 are inserted between the flange of the split tee 32 and the steel column 1. Matsuo also discloses connecting a pair of flanges of upper and lower tees to a steel column using bolts 4 and 5 and by molding concrete slab 14 to both the upper and lower flanges of the steel beam 2. See figures 15 and 16. Hence, in modifying Furuumi in view of Beauvior and Matsuo, the yield stress of the steel material used for the flange of the split tee, to which the flange(upper) of the concrete slab has been molded and connected is higher than the upper limit of the yield stress of the steel material used for the flange of the other, lower split tee. Further, it would have been obvious to one of ordinary skill in the art to modify Furrumi et al to include the concrete to reinforce and strengthen the beam to column structure as shown by Matsuo et al..

The above claims lacks the open space along the entire length of the flange perpendicular to the axial direction of the steel column. Figure 14 or Matsuo discloses the flange of at least one split tee and the steel column are connected in the state of maintaining the open space 10c across the entire length of the flange perpendicular to the axial direction of the steel column 1 at least at a region corresponding to the extended direction of the web of at least one split tee because the space keeping member 10 are situated perpendicularly to the column instead of parallel to the column. It would have been obvious to oriented the space keeping members perpendicular to the axial direction of the column in order surround the column to facilitate adding the spacer 10 to the column.

The open space would inherently provide for the plasticization of the flange of the at least one split tee in the tensile and compressive direction being allowed; Nevertheless, nomichi discloses a split tee are 5 to join a column to a beam, 2,3; the split tee area has a plastic deformation part or flange 34.. It would have been obvious to include a flange of a tee capable of accommodating plastic deformation in order to provide a low cost structure with high damping characteristics.

Claims 9, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuumi (JP 05263469) , Matsuo and Beauvoir, Nomichi et al(JP 07150629A) and further in view of Byfield et al (6754992).

Byfield et al discloses a column beam join structure fabricated by

• connecting flanges 4 of upper and lower split tees 3 to a steel column 1/2 using bolts 11

• by engaging the engaging and connecting webs 1/2 of the tees 3 of the ends of the flanges of the steel beam using bolts or

• by engaging and connecting the upper and lower flanges of a steel beam between the webs of the upper and lower split tees using bolts

• Beauvoir discloses the upper limit of the yield stress of 50ksi of the steel material used for either one or both web and flange of the slit tee 10 is defined not to be more than the lower limit of 36ksi thereof; see column 5, lines 1-7 • where both ends of the flange of the split tee are connected to the steel column using bolts

Applicant's arguments are moot in view of the new ground of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chapman E Jeanette whose telephone number is 571-272-6841. The examiner can normally be reached on Mon.-Fri, 8:30-6:00, every other fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Dunn can be reached on 571-272-6670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jeanette Chapman/
Primary Examiner, Art Unit 3633